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 NEWS  1           Web Page URLs for STN Seminar Schedule - N. America
 NEWS  2           "Ask CAS" for self-help around the clock
 NEWS  3  FEB 27   New STN AnaVist pricing effective March 1, 2006
 NEWS  4  APR 04   STN AnaVist $500 visualization usage credit offered
 NEWS  5  MAY 10   CA/CAplus enhanced with 1900-1906 U.S. patent records
 NEWS  6  MAY 11   KOREAPAT updates resume
 NEWS  7  MAY 19   Derwent World Patents Index to be reloaded and enhanced
 NEWS  8  MAY 30   IPC 8 Rolled-up Core codes added to CA/CAplus and
                   USPATFULL/USPAT2
 NEWS  9  MAY 30   The F-Term thesaurus is now available in CA/CAplus
 NEWS 10  JUN 02   The first reclassification of IPC codes now complete in
                   INPADOC
 NEWS 11  JUN 26   TULSA/TULSA2 reloaded and enhanced with new search and
                   and display fields
 NEWS 12  JUN 28   Price changes in full-text patent databases EPFULL and PCTFULL
 NEWS 13  JUl 11   CHEMSAFE reloaded and enhanced
 NEWS 14  JUl 14   FSTA enhanced with Japanese patents
 NEWS 15  JUl 19   Coverage of Research Disclosure reinstated in DWPI
 NEWS 16  AUG 09   INSPEC enhanced with 1898-1968 archive

 NEWS EXPRESS  JUNE 30 CURRENT WINDOWS VERSION IS V8.01b, CURRENT
               MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 26 JUNE 2006.

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 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation of IPC 8
 NEWS X25      X.25 communication option no longer available

Enter NEWS followed by the item number or name to see news on that
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FILE 'HOME' ENTERED AT 07:46:44 ON 24 AUG 2006

=> file CAPLUS
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.42       0.42

FILE 'CAPLUS' ENTERED AT 07:47:36 ON 24 AUG 2006
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FILE COVERS 1907 - 24 Aug 2006 VOL 145 ISS 9
FILE LAST UPDATED: 22 Aug 2006 (20060822/ED)


```
=> s particle (A) size (P) surface (A) area
        705849 PARTICLE
        783336 PARTICLES
       1183403 PARTICLE
                 (PARTICLE OR PARTICLES)
       1001578 SIZE
        133600 SIZES
       1073448 SIZE
                 (SIZE OR SIZES)
       2271922 SURFACE
        429931 SURFACES
       2447204 SURFACE
                 (SURFACE OR SURFACES)
        615728 AREA
        267819 AREAS
        825411 AREA
                 (AREA OR AREAS)
L1       10578 PARTICLE (A) SIZE (P) SURFACE (A) AREA

=> l1 (p) BET (A) measure?
L1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> s l1 (p) BET (A) measure?
         17199 BET
           417 BETS
         17609 BET
                 (BET OR BETS)
       2696682 MEASURE?
L2           30 L1 (P) BET (A) MEASURE?

=> d scan

L2    30 ANSWERS   CAPLUS  COPYRIGHT 2006 ACS on STN
CC   74-1 (Radiation Chemistry, Photochemistry, and Photographic and Other
     Reprographic Processes)
TI   Preparation and characterization of nanosized Zr-doped titania particles
     and influences on photocatalytic activity
ST   synthesis characterization nanosized zirconium doped titania particle
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photocatalysis
IT Catalysis
(photochem.; preparation and characterization of nanosized Zr-doped titania particles and influences on photocatalytic activity)
IT Nanoparticles
Sol-gel processing
(preparation and characterization of nanosized Zr-doped titania particles and influences on photocatalytic activity)
IT 7440-67-7, Zirconium, uses 13463-67-7, Titania, uses
RL: CAT (Catalyst use); USES (Uses)
(preparation and characterization of nanosized Zr-doped titania particles and influences on photocatalytic activity)

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> dup rem
ENTER L# LIST OR (END):l2
PROCESSING COMPLETED FOR L2
L3 30 DUP REM L2 (0 DUPLICATES REMOVED)

=> dis total ibib abs

L3 ANSWER 1 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:450669 CAPLUS
TITLE: Rapid synthesis of silica aerogels via a new ambient pressure drying process
AUTHOR(S): Shi, Fei; Wang, Li-jiu
CORPORATE SOURCE: Building Mater. Res. Lab., Dalian Univ. of Technol., Dalian, 116024, Peop. Rep. China
SOURCE: Dalian Ligong Daxue Xuebao (2006), 46(2), 241-245
CODEN: DLXUEJ; ISSN: 1000-8608
PUBLISHER: Dalian Ligong Daxue
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Using cheap water glass as silica sources, silica aerogels were synthesized by ambient pressure drying after the hydrogel was immersed in EtOH/TMCS/heptane solution One-step solvent exchange and surface modification of hydrogel were performed by TMCS reacting with ethanol, pore water and Si-OH group on the surface of the gel. The synthesized silica aerogel was a light, transparent and crack-free solid, with the d. of 0.128-0.165 g/cm3 and porosity 92.4%-94.2%. The microstructure and morphol. of the aerogel were studied by FT-IR, SEM, TEM and BET measurement. The results indicate that silica aerogel is a mesoporous structure with uniform particle size and pore diameter distribution, showing a honeycomb structure on the cross-section. The pore diameter and sp. surface areas of silica aerogel are about 13 nm and 618 m2/g resp. And there is obvious Si-CH3 group on the surface of silica aerogel.

L3 ANSWER 2 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2006:197112 CAPLUS
DOCUMENT NUMBER: 144:261614
TITLE: Highly efficient Ru/MgO catalysts for NH3 decomposition: Synthesis, characterization and promoter effect
AUTHOR(S): Zhang, Jian; Xu, Hengyong; Ge, Qingjie; Li, Wenzhao
CORPORATE SOURCE: Dalian Institute of Chemical Physics, Graduate School of the Chinese Academy of Sciences, Dalian, 116023, Peop. Rep. China
SOURCE: Catalysis Communications (2006), 7(3), 148-152
CODEN: CCAOAC; ISSN: 1566-7367
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Highly dispersed Ru nanoparticles exhibiting high catalytic activity in NH3 decomposition were prepared by a polyol reduction method. The physicochem. properties were studied using nitrogen physisorption, X-ray diffraction (XRD), transmission electron microcopy (TEM) and thermogravimetry (TG). BET measurements showed the obtained Ru/MgO mesoporous material possessed a surface area as high as 151 m2 g-1cat. As evidenced by TEM images, the particle size of Ru ranged narrowly from 1.2 to 2.3 nm. XRD examination revealed that the MgO particles as the support with mean size of 8 nm were successfully synthesized. Different alkali metal salts were added as the promoter through conventional impregnation, by which the catalytic activity could be significantly enhanced.

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 3 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:1233539 CAPLUS
DOCUMENT NUMBER: 145:12591
TITLE: Fabrication of high surface area graphitic nanoflakes on carbon nanotubes templates
AUTHOR(S): Chen, Chien-Chung; Chen, Chia-Fu; Lee, I-Hsuan; Lin, Chien-Liang
CORPORATE SOURCE: Department of Materials Science and Engineering, Nation Chiao Tung University, Hsinchu, Taiwan
SOURCE: Diamond and Related Materials (2005), 14(11-12), 1897-1900
CODEN: DRMTE3; ISSN: 0925-9635
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Graphitic nanoflakes were fabricated on the carbon nanotubes templates for increasing the surface area utilizing bias assisted microwave plasma enhanced chemical vapor deposition (MWPECVD). The anal. of morphologies and structures were achieved by means of SEM and transmission electron microscopy. The surface area of graphitic nanoflakes, carbon nanotubes (CNTs) and graphitic nanoflakes/CNTs were 57.44 m2/g, 90.31 m2/g and 130.96 m2/g from BET measurement, resp. The cyclic voltammetry was used to calculate the active area of platinum catalysts in 1 M sulfuric acid from hydrogen adsorption peak. An enhancement of activity could be observed from the calcn. of CV results. This may be attributed to the small particle size and high dispersion of platinum particles coated on graphitic nanoflakes/CNTs. These high surface area materials could be used as catalysts supports or electrode for fuel cell applications.

REFERENCE COUNT: 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 4 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2005:637007 CAPLUS
DOCUMENT NUMBER: 144:412122
TITLE: Esterification of 1° and 2° alcohol using an ecofriendly solid acid catalyst comprising 12-tungstosilicic acid and hydrous zirconia
AUTHOR(S): Bhatt, Nikunj; Patel, Anjali
CORPORATE SOURCE: Chemistry Department, Faculty of Science, M.S. University of Baroda, Vadodara, 390002, India
SOURCE: Journal of Molecular Catalysis A: Chemical (2005), 238(1-2), 223-228
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Ecofriendly solid acid catalyst were synthesized by supporting

12-tungstosilicic acid onto hydrous zirconia using impregnation method to contribute towards clean technol. which is the most important need of the society. The support and resulting catalysts were characterized by various spectral, thermal, and physicochem. techniques. The techniques used were chemical stability, ion exchange capacity, DSC, FTIR, electronic spectra, XRD, particle size distribution and surface area measurement (BET method). Further, the surface morphol. was studied by SEM. The keggin structure does not destruct after supporting. Their catalytic properties were evaluated for the esterification reaction. Esterification of 1° alcs. (n-butanol, iso-butanol) and 2° alcs. (2-butanol, cyclohexanol) was carried out by varying different parameters such as different amount of the catalysts, different mole ratio of acid to alc. using the synthesized catalysts. Using the present catalysts, very high activity in all esters synthesis can be obtained.

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 5 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:109547 CAPLUS
DOCUMENT NUMBER: 142:415666
TITLE: Preparation of Y2O3-doped CeO2 nanopowders by microwave-induced combustion process
AUTHOR(S): Fu, Yen-Pei; Lin, Cheng-Hsiung
CORPORATE SOURCE: Department of Chemical Engineering, Wu-Feng Institute of Technology, Chiayi, 621, Taiwan
SOURCE: Journal of Alloys and Compounds (2005), 389(1-2), 165-168
CODEN: JALCEU; ISSN: 0925-8388
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Y2O3-doped CeO2 nanopowders were successfully prepared by microwave-induced combustion process using cerium nitrate hexahydrate, yttrium nitrate hexahydrate, and urea. The process took only a few minutes to obtain Y2O3-doped CeO2 powders. The nanopowders were investigated by differential thermal analyzer/thermogravimeter (TG/DTA), x-ray diffractometer, TEM, and sp. surface area measurements (BET). The as-received Y2O3-doped CeO2 powders revealed that the average particle size ranged from 19 to 25 nm, crystallite dimension varied from 14 to 16 nm, and the distribution of sp. surface range from 33 to 43 m2/g.

REFERENCE COUNT: 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 6 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:357949 CAPLUS
DOCUMENT NUMBER: 144:235418
TITLE: Preparation and microstructural control of titanium oxide nano-crystalline
AUTHOR(S): Matsushima, Shigenori; Kougo, Takeshi; Yamane, Hirokazu; Nakamura, Hiroyuki; Yamada, Kenji
CORPORATE SOURCE: Kitakyushu National College of Technology, Japan
SOURCE: Kitakyushu Kogyo Koto Senmon Gakko Kenkyu Hokoku (2005), 38, 87-91
CODEN: KKKHDI; ISSN: 0285-5283
PUBLISHER: Kitakyushu Kogyo Koto Senmon Gakko
DOCUMENT TYPE: Journal
LANGUAGE: Japanese

AB TiO2 particles are formed under various hydrothermal conditions, and the phys. and chemical properties are measured using XRD, TG/DTA, FE-SEM, and BET apparatuses. A precipitate obtained by hydrolyzing Ti isopropoxide was peptized in an oil bath at 80°, and hydrothermally treated in a stainless

autoclave at 200-240°. XRD measurement showed that the peptized powders consist of a mixture phase of anatase and brookite. Rietveld anal. revealed that the ratio of anatase to brookite increased with the elevation of hydrothermal temperature BET measurement shows as the hydrothermal temperature increases, the TiO2 sp. surface area decreases; attributed to disappearance of fine pores in TiO2. The powders were finely dispersed by ultrasonicaion and the maximum of particle-size distribution shifted from 64 nm to 39 nm.

L3 ANSWER 7 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:302374 CAPLUS
DOCUMENT NUMBER: 141:164692
TITLE: Preparation and characterization of nanosized Zr-doped titania particles and influences on photocatalytic activity
AUTHOR(S): Bi, Huai-qing; Yuan, Wen-hui; Wei, Chao-hai
CORPORATE SOURCE: Research Institute of Chemical Engineering, South China University of Technology, Guangzhou, 510640, Peop. Rep. China
SOURCE: Cailiao Kexue Yu Gongcheng Xuebao (2004), 22(1), 98-101
CODEN: CKYGAS
PUBLISHER: Cailiao Kexue Yu Gongcheng Xuebao Bianjibu
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Nanosized TiO2 and Zr doped TiO2 particles have been prepared by sol-gel method in this paper. TGA anal. results found that surface hydrophobility of doped TiO2 increased. SEM and BET measurement results showed that the sp. surface area of Zr doped TiO2 is more than that of pure TiO2 because of the particle size reduced, XRD characterization manifested that TiO2 crystal transition could be prevented by Zr doping. Photocatalysis exptl. results found that photocatalysis activity of doped TiO2 calcined at 530°C was highest with Zr doping concentration 5%.

L3 ANSWER 8 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:767464 CAPLUS
DOCUMENT NUMBER: 141:414897
TITLE: The effect of K and Al over NiCo2O4 catalyst on its character and catalytic oxidation of VOCs
AUTHOR(S): Chen, Min; Zheng, Xiao-Ming
CORPORATE SOURCE: Institute of Chemistry, Zhejiang University, Hangzhou, 310028, Peop. Rep. China
SOURCE: Journal of Molecular Catalysis A: Chemical (2004), 221(1-2), 77-80
CODEN: JMCCF2; ISSN: 1381-1169
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB NiCo2O4, K-NiCo2O4, and Al-NiCo2O4 spinel oxides were prepared by co-precipitated method. The properties of these three samples were investigated by X-ray powder diffraction (XRD), temperature-programmed reduction (TPR), Brunauer-Emmett-Teller (BET) measurement, and XPS technologies. The catalytic activity of volatile organic compds. (VOCs) oxidation was found to be decreased after adding aluminum and increased after adding potassium in NiCo2O4 sample. The small particle size of NiCo2O4 was responsible for VOCs oxidation The potassium was the most effective in promoting NiCo2O4 sample in reducibility and surface area. XPS anal. indicated that the electrophonic oxygen species on the catalyst surface is the main active oxygen and plays an important role in total oxidation of VOCs.
REFERENCE COUNT: 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 9 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:732361 CAPLUS
DOCUMENT NUMBER: 137:379126
TITLE: Benzyl Alcohol and Titanium Tetrachloride-A Versatile Reaction System for the Nonaqueous and Low-Temperature Preparation of Crystalline and Luminescent Titania Nanoparticles
AUTHOR(S): Niederberger, Markus; Bartl, Michael H.; Stucky, Galen D.
CORPORATE SOURCE: Department of Chemistry and Biochemistry, University of California, Santa Barbara, CA, 93106, USA
SOURCE: Chemistry of Materials (2002), 14(10), 4364-4370
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The reaction between TiCl4 and benzyl alc. is a simple and nonaq. procedure for the synthesis of highly crystalline TiO2 nanoparticles at temps. ≥40°. Safety caution: the reaction is rather violent. XRD measurements prove the exclusive presence of the anatase phase. The particle growth depends strongly on temperature so that with the appropriate thermal conditions the particle size can be selectively adjusted at 4-8 nm. Fine-tuning of the particle size is possible by a proper choice of the relative amts. of benzyl alc. and TiCl4. Lowering the TiCl4 concentration leads to a considerable decrease of particle size. BET measurements show particularly high surface areas, up to 345 m2/g for the smallest particles and 115 m2/g for the calcined material. TEM studies reveal that the nanoparticles are nearly uniform in size and shape. The as-synthesized particles display only minor agglomeration, whereas the calcined material consists of completely nonagglomerated particles, with diams. ranging from 13 to 20 nm. The smallest particles are soluble in a THF/trioctylphosphine mixture that luminesces (425 nm) upon UV irradiation
REFERENCE COUNT: 65 THERE ARE 65 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 10 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:72583 CAPLUS
DOCUMENT NUMBER: 136:204041
TITLE: Study on the Structure and Formation Mechanism of Molybdenum Carbides
AUTHOR(S): Hanif, Ahmad; Xiao, Tiancun; York, Andrew P. E.; Sloan, Jeremy; Green, Malcolm L. H.
CORPORATE SOURCE: Wolfson Catalysis Centre Inorganic Chemistry Laboratory, University of Oxford, Oxford, OX1 3QR, UK
SOURCE: Chemistry of Materials (2002), 14(3), 1009-1015
CODEN: CMATEX; ISSN: 0897-4756
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The synthesis of high-surface-area molybdenum carbides was studied by the temperature-programmed carburization of molybdenum trioxide MoO3. The feedstocks used were mixts. of methane and ethane with hydrogen. The solid reaction products were characterized at selected intervals using thermogravimetric anal. differential scanning calorimetry (TGA-DSC), surface area measurement (BET), x-ray diffraction (x-ray diffraction), and high-resolution TEM (HRTEM). The gaseous products of the carburization process were monitored using a gas chromatograph equipped with a mass spectrometer (GC-MS). The structural properties of the product carbides are shown to depend on the conditions of synthesis. The C2H6/H2 feedstock gave the highest-

surface-area material. The presence of H2 in the feed mixture reduced the amount of amorphous carbon deposited an the molybdenum carbide material. The surface area was found to increase most rapidly during the initial H2-reduction stage. Initially, the MoO3 is reduced to form MoO3-x. This material has structural defects, which can account for a decrease in the average particle size and an increased porosity, resulting in an increased surface area. During the carburization process, three phase transitions are observed At higher temps., the rate of deposition of graphitic and amorphous carbons derived from CH4 or CO is much greater than the rate of hydrogenation of the deposited carbon, resulting in the formation of surface graphitic carbon.

REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 11 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:230617 CAPLUS
DOCUMENT NUMBER: 140:345465
TITLE: Preparation and characterization of SiO2 nanoparticle and mesoporous silicate molecular sieve MCM-48
AUTHOR(S): Seo, Kyung Won; Moon, Sung Du; Kang, Young Soo; Kim, Yong Joo
CORPORATE SOURCE: Department of Chemistry, Pukyong National University, Pusan, 608-737, S. Korea
SOURCE: International Journal of Nanoscience (2002), 1(5 & 6), 539-543
CODEN: IJNNAJ; ISSN: 0219-581X
PUBLISHER: World Scientific Publishing Co. Pte. Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nanosize SiO2 particles with narrow size distribution were produced by modified Stober-Fink-Bohn method. Average particle size was determined as 170 nm by SEM image. Organo-silica mesoporous mol. sieve (MCM-48) was prepared The calcined MCM-48 has pore diameter of 26.8 Å and a surface area of 1024 m2 g-1 by BET measurement.

REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 12 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:339038 CAPLUS
DOCUMENT NUMBER: 137:149102
TITLE: Magnetic properties of nanosize NiFe2O4 particles synthesized by pulsed wire discharge
AUTHOR(S): Kinemuchi, Yoshiaki; Ishizaka, Kazuhiro; Suematsu, Hisayuki; Jiang, Weihua; Yatsui, Kiyoshi
CORPORATE SOURCE: Nagaoka University of Technology, Extreme Energy-Density Research Institute, Nagaoka, 940-2188, Japan
SOURCE: Thin Solid Films (2002), 407(1-2), 109-113
CODEN: THSFAP; ISSN: 0040-6090
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Nanosize particles of Ni ferrite, NiFe2O4, were successfully synthesized by pulsed wire discharge (PWD). In PWD, a simple circuit consisting of a capacitor and a gap switch drives the discharge. The wires of Ni and Fe were simultaneously discharged in a chamber filled with O. The particles floating in the ambient gas were collected by pumping the gas through a membrane filter, and subjected to further anal. The sp. surface area of the particles were measured by the Brunauer-Emmet-Teller (BET) method. X-ray diffraction showed the formation of NiFe2O4 and the inclusion of NiO. The NiO inclusion is 18 volume%. Magnetization hysteresis was measured for the particles synthesized at 600 torr. X-ray

diffraction and BET measurements reveal that
particle size increases with increase in O pressure.
The saturation magnetization is 33 emu/g for the particle with 45 nm in the size.

REFERENCE COUNT: 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 13 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:383326 CAPLUS
DOCUMENT NUMBER: 137:128453
TITLE: Ce-Zr mixed oxides prepared in molten nitrates
AUTHOR(S): Afanasiev, P.
CORPORATE SOURCE: Institut de Recherche sur la Catalyse, Villeurbanne, 69626, Fr.
SOURCE: Journal of Alloys and Compounds (2002), 340(1-2), 74-78
CODEN: JALCEU; ISSN: 0925-8388
PUBLISHER: Elsevier Science B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Dispersed Ce0.75Zr0.25O2 and Zr0.84Ce0.16O2 cerium(IV)-zirconium(IV) mixed oxides were prepared by the flux method, from the reaction of hydrated Ce(NO3)3 and ZrOCl2 in molten NaNO3 at 450-500°C in the presence of ammonium fluoride. The temperature and the stoichiometry of reactions were determined by mass spectrometry. Powder X-ray diffraction, sp. surface area measurements (BET), and SEM were used to
study the morphol. and particle size distribution of
the solid products. Preparation conditions were optimized to obtain pure oxides. Reaction at 550°C in the presence of 1% weight of ammonium fluoride gave the best result.

REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 14 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:290489 CAPLUS
DOCUMENT NUMBER: 135:99691
TITLE: Structure and photocatalytic performance of surface bond-conjugated TiO2/SiO2 catalyst
AUTHOR(S): Hu, Chun; Wang, Yizhong; Tang, Hongxiao
CORPORATE SOURCE: State Key Laboratory of Enronmental Aquatic Chemistry, Research Center for Eco-Environmental Sciences, The Chinese Academy of Sciences, Beijing, 100085, Peop. Rep. China
SOURCE: Cuihua Xuebao (2001), 22(2), 185-188
CODEN: THHPD3; ISSN: 0253-9837
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Surface bond-conjugated TiO2/SiO2 catalyst was prepared by means of impregnation method with cyclohexane solution of tetra-Bu titanate. The catalyst overcomes the difficulty of liquid-solid separation owing to the formation of milky dispersion after mixing the powdered TiO2 in water. Based on the results of XRD, FT-IR, XPS and BET measurements
, the growth of TiO2 (predominantly anatase) on the SiO support seems to occur by anchoring the TiO2 phase through Ti-O-Si crosslinking bonds. The structure model of TiO2/SiO2 was proposed. Compared with B-TiO2, the most efficient catalyst is 30% TiO2/SiO2 (Ims 30), which showed three times higher photoactivity for degradation of reactive brilliant red K-2G(R15). In addition, the catalyst had higher photoactivity and bigger sp.
surface area on SiO2 with smaller particle
size than on that with larger particle size.
SiO2 gel plays the basic roles of dispersion and support for powder TiO2. Meanwhile, SiO2 gel has better transmission for light. The isoelectronic point of the catalyst was 3.0 pH units by measurement of zeta-potential,

indicating the presence of acidity on the catalyst surface.

L3 ANSWER 15 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:465117 CAPLUS
DOCUMENT NUMBER: 135:220048
TITLE: Synthesis of nanometer crystalline lanthanum chromite powders by the citrate-nitrate autoignition reaction
AUTHOR(S): Zupan, Klementina; Pejovnik, Stane; Macek, Jadran
CORPORATE SOURCE: Faculty of Chemistry and Chemical Technology, University of Ljubljana, Slovenia
SOURCE: Acta Chimica Slovenica (2001), 48(1), 137-145
CODEN: ACSLE7; ISSN: 1318-0207
PUBLISHER: Slovenian Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Lanthanum chromite-based materials have a great potential for use in various high temperature applications and as SOFC (solid oxide fuel cell) separators. Submicron crystalline lanthanum chromite was prepared by the autoignition of a citrate-nitrate gel. The effect of the fuel-oxidant molar ratio and sample form prior to combustion was studied in terms of phase formation, particle size, morphol., and agglomerate formation. Various characterization methods, including x-ray powder diffraction and thermal anal., SEM and BET measurement, were used to evaluate powder characteristics. The reaction period depends on the fuel/oxidant ratio and reaction mixture packing. The lanthanum chromite powders prepared via the combustion route exhibited surface areas of .apprx.12 m2/g for the loose packed layer prepared samples and 8.8 to 13 m2/g for the samples prepared from a pellet.
REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 16 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:224644 CAPLUS
DOCUMENT NUMBER: 135:34589
TITLE: Effects of heat treatment on structure and properties of ultrafine K-Co-Mo catalysts
AUTHOR(S): Bao, Jun; Bian, Guo-zhu; Fu, Yi-lu; Hu, Tian-dou; Liu, Tao
CORPORATE SOURCE: Department of Chemical Physics, University of Science and Technology of China, Hefei, Anhui, 230026, Peop. Rep. China
SOURCE: Ranliao Huaxue Xuebao (2001), 29(1), 60-64
CODEN: RHXUD8; ISSN: 0253-2409
PUBLISHER: Kexue Chubanshe
DOCUMENT TYPE: Journal
LANGUAGE: Chinese
AB Co-Mo ultrafine particles were prepared by sol-gel method with citric acid as a complexation agent. The obtained dried gel was calcined in air and argon atmospheres, resp. After promoting by K2CO3 and sulfiding, the two catalysts were measured in mixed alc. synthesis from syngas. The XRD results showed that the Co-Mo particles treated in air were single CoMoO4 crystallites with average size of 60 nm. For the sample treated in argon, the main species in the sample were CoMoO3, besides, some Co-MoO4 existed, and the average size was about 20 nm. These results indicated that the decomposition of citric acid reduced the CoMoO4 species and decreased the particle size remarkably. BET measurements showed that, treating the dried gel in argon, the obtained Co-Mo particle and corresponding sulfided sample possessed a larger surface area. For the sulfided catalysts, MoS2 and Co9S8 species were detected by XRD, addnl., CoMoS3.13 species may also existed. Both the XRD and EXAFS results indicated that the sulfided sample whose precursor treated in argon possessed smaller average size. The

catalytic activity measurement showed that the decrease of the particle sizes resulted in better properties for mixed alc. synthesis.

L3 ANSWER 17 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:809481 CAPLUS
DOCUMENT NUMBER: 134:88881
TITLE: Surface area and porosity of primary silicate minerals
AUTHOR(S): Brantley, Susan L.; Mellott, Nathan P.
CORPORATE SOURCE: Department of Geosciences, Pennsylvania State University, University Park, PA, 16802, USA
SOURCE: American Mineralogist (2000), 85(11-12), 1767-1783
CODEN: AMMIAY; ISSN: 0003-004X
PUBLISHER: Mineralogical Society of America
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Surface area is important in quantifying mineral-water reaction rates. Sp. surface area (SSA) was measured to investigate controls on this parameter for several primary silicate minerals (PSM) used to estimate rates of weathering. The SSA measured by gas adsorption for a given particle size of relatively impurity-free, laboratory-ground samples generally increases in the order: quartz ≈ olivine ≈ albite < oligoclase ≈ bytownite < hornblende ≈ diopside. Reproducibility of BET SSA values range from ±70% (SSA < 1000 cm2/g) to ± 5% (SSA > 4000 cm2/g) and values measured with N2 were observed to be up to 50% larger than values measured with Kr. For laboratory-ground Amelia albite and San Carlos olivine, SSA can be calculated using log (SSA, cm2/g) = b + m log (d), where d = grain diameter (μm), b = 5.2 ± 0.2 and m = -1.0 ± 0.1. A similar equation was previously published for laboratory-ground quartz. Some other samples showed SSA higher than predicted by these equations. In some cases, high SSA is attributed to significant second phase particulate content, but for other laboratory-ground samples, high SSA increased with observed hysteresis in the adsorption-desorption isotherms. Such hysteresis is consistent with the presence of pores with diams. in the range 2 to 50 nm (mesopores). In particular, porosity that contributes to BET-measured SSA is inferred for examples of laboratory-ground diopside, hornblende, and all compns. of plagioclase except albite, plus naturally weathered quartz, plagioclase, and potassium feldspar. Previous workers documented similar porosity in laboratory-ground potassium feldspar. Surface area measured by gas adsorption may not be appropriate for extrapolation of interface-limited rates of dissoln. of many silicates if internal surface is present and if it does not dissolve equivalently to external surface. In addition, the large errors associated in measuring SSA of coarse and/or impurity-containing silicates suggest that surface area-normalized kinetics in both field and laboratory systems will be difficult to estimate precisely. Quantification of the porosity in laboratory-ground and naturally weathered samples may help to alleviate some of the discrepancy between laboratory- and field-based ests. of weathering rate.
REFERENCE COUNT: 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L3 ANSWER 18 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2000:261806 CAPLUS
DOCUMENT NUMBER: 132:351439
TITLE: Synthesis of cerium(IV) oxide ultrafine particles by solid-state reactions
AUTHOR(S): Yu, Xianghua; Li, Feng; Ye, Xiangrong; Xin, Xinquan; Xue, Ziling
CORPORATE SOURCE: Department of Chemistry and State Key Laboratory of Coordination Chemistry, Nanjing University, Nanjing, 210093, Peop. Rep. China
SOURCE: Journal of the American Ceramic Society (2000), 83(4),

DOCUMENT NUMBER: 108:101748
TITLE: Stabilization and characterization of small platinum clusters (<1 nm) on titania powders via citrate reduction
AUTHOR(S): Hoffmann, W.; Graetzel, M.; Kiwi, J.
CORPORATE SOURCE: Nukem G.m.b.H., Hanau, D-6540/11, Fed. Rep. Ger.
SOURCE: Journal of Molecular Catalysis (1987), 43(2), 183-91
CODEN: JMCADS; ISSN: 0304-5102
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Pt clusters obtained in situ via reduction of H2PtCl6 by citrate ions in the presence of TiO2 afford noble metal clusters of <1 nm diameter These Pt clusters are stabilized by TiO2 and are active in catalytic processes. The phys. properties of these particles, such as particle size, Pt loading, crystal morphol. of the TiO2 used, and surface impurities, depend on the preparation technique used. The topol. of the Pt clusters on the TiO2 surface was examined for 0.1-10% Pt loading. For 0.5% Pt loading, the oxidation state of the catalyst was examined by statistical ESCA. This preparation techniques gives Pt clusters with a relatively small proportion of 0 valent Pt, the rest of the Pt being in higher oxidation states. Atomic absorption, elementary anal., x-ray diffraction, and surface area (BET) measurements were used as complementary techniques to allow a detailed characterization of the species existing at the Pt-TiO2 interphase.

L3 ANSWER 30 OF 30 CAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1987:198754 CAPLUS
DOCUMENT NUMBER: 106:198754
TITLE: Reactivity of raw and processed materials of explosive mixtures. I. Reactivity of red lead
AUTHOR(S): Nakamura, Hidetsugu; Fujimura, Hiromi; Hara, Yasutake; Osada, Hideyo
CORPORATE SOURCE: Dep. Environ. Sci., Kyushu Inst. Tech., Kitakyushu, 804, Japan
SOURCE: Kogyo Kayaku (1986), 47(6), 342-8
CODEN: KOKYBR; ISSN: 0368-6450
DOCUMENT TYPE: Journal
LANGUAGE: Japanese
AB General properties, especially surface structure and surface physics of com. samples of Pb3O4 were studied with centrifugal sedimentation apparatus for particle-size distribution measurement, BET surface area meter, SEM, ESCA, and some chemical analyses. The red leads consists of 2 parts of PbO per part of PbO2. The formation of PbCO3 and 2PbCO3Pb(OH)2 during standing in an atmospheric with 100% relative humidity for 40 days was confirmed by IR-absorption spectroscopy and x-ray diffraction patterns. Thermal decomposition (500-530° in Ar) follows the autocatalytic rate equation dx/dt = kx1/2(1 - x), where activation energy is 49.7 kcal/mol. Reacted isothermally Pb3O4 was with 13% aqueous solution of N2H4 at 40, 50, 60, and 70° for measurement of surface activity as an index of practical formulation of mixed explosives such as delay composition The reaction obeyed an exponential rate equation at initial stage and then the Jander equation in the range of reaction-fraction 0.25-0.91. Burning velocities of some delay compns. (Pb3O4:FeSi:Sb2S3 = 57:6:37) were 0.262-0.335 cm/s in an Al tube with 6 mm in inside diameter

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